

EPA Superfund Explanation of Significant Differences:

POWELL ROAD LANDFILL

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DAYTON, OH

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This memorandum conveys our recommendation that you concur with the attached Explanation of Significant Differences ("ESD") for the Powell Road Landfill site, which is located in Huber Heights, Montgomery County, Ohio. The ESD modifies the remedy selected in the September 30, 1993, Record of Decision by postponing design and implementation of groundwater systems until other components are completed, and evaluation of continued groundwater monitoring data is completed. Design and implementation revisions or lack thereof for the groundwater system will then be examined and a compliant remedy will be applied.

The ESD was prepared in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act 42 U.S.C. Section 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986. Public Law 99-499; to the extent practicable, the National Contingency Plan, 40 CFR Part 300; and Agency policy. We have reviewed the attached document and have concluded that the ESD is both legally and technically sufficient. As such, we believe that implementation of this remedy measure is a proper exercise of your delegated authority. Your signature (below) will indicate your concurrence.

Please feel free to contact either of us should you have any questions.

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EXPLANATION OF SIGNIFICANT DIFFERENCES

POWELL ROAD LANDFILL
HUBER HEIGHT, OHIO

I. Introduction

The Powell Road Landfill site (the "Site") is located in Huber Heights, Ohio, a suburb in the northern Dayton metropolitan area of Montgomery County, Ohio. The site is located at 4060 Powell Road, Huber Heights, Ohio and encompasses approximately 70 acres. It is bordered to the north by Powell Road and residential housing, to the east by an intermittent stream, to the west by wooded areas and to the south by wooded areas and the Great Miami River. The actual area for waste disposal covers approximately 36 acres, rising 30 to 40 feet above the surrounding terrain. The nearest residents are about 200 feet north of the landfill on Powell Road. A residential area known as Eldorado Plat is immediately south of the Great Miami River to the south of the landfill. The site is located on till, lacustrine deposits, bedrock and the outwash deposits that constitute the Great Miami River buried valley aquifer, which is a designated sole-source aquifer under U.S. EPA's Safe Drinking Water Act.

The U.S. Environmental Protection Agency ("U.S. EPA") and the Ohio Environmental Protection Agency ("Ohio EPA") are the lead and support agencies, respectively, for the conducting the remedial action at the Site under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") of 1980, as amended by the 1986 Superfund Amendments and Reauthorization Act ("SARA"), 42 U.S.C. Section 9601, et seq. U.S. EPA issued a Record of Decision ("ROD") on September 30, 1993, which outlined the remedy selection process and the selected clean-up action for the Site. The selected remedial action addresses the sources of the contamination by containment of the landfill and contaminated soils and treatment of

leachate and ground water. The major components of the selected remedial action are:

- institutional controls
- improved landfill cap with liner
- excavation of contaminated soils
- consolidation of contaminated soils under landfill cap
- ground water monitoring
- flood protection
- storm water controls
- active landfill gas collection with flare
- leachate extraction
- on-site leachate treatment
- extraction of ground water from the shallow aquifer adjacent to the landfill
- on-site ground water treatment
- discharge of treated ground water and leachate to river.

1 The term "Site", as used herein, refers to the location where the treatment, storage, disposal or other placement of hazardous substances was conducted at the Powell Road Landfill, or otherwise came to be located as a result of disposal operations at the Powell Road Landfill.

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Ohio EPA concurred with the selected remedy in the ROD.

Pursuant to Section 117(c) of CERCLA, 42 U.S.C. §9617(c) and 40 CFR 300.435 (c), U.S. EPA offers herein an explanation of the significant differences ("ESD") from the POD remedy that will now be incorporated into the final remedial action.

II. Summary of Proposed and Accepted Significant Differences from the ROD Remedy

As a result of ground water quality data gathered throughout the remedial investigation and during the pre-design field investigations, the potentially responsible parties ("PRPs") proposed discontinuing the ground water extraction and treatment portions of the remedial design and remedial action. Upon careful review of the supporting documentation on which the proposal was based, U.S. EPA and Ohio EPA (the Agencies) have determined that discontinuing these portions of the selected remedy is not appropriate. However, for reasons explained below, the Agencies have also determined that allowing the ground-water portions of the remedy to be designed and implemented after the remaining remedial components are in place (phasing) is protective of human health and the environment and an acceptable change to the selected remedy.

Section 117(c) of CERCLA, as amended by SARA, states that:

[a]fter adoption of a final remedial action plan-

- (1) if any remedial action is taken,
- (2) if any enforcement action under section 106 is taken, or
- (3) if any settlement or consent decree under section 106 or section 122 is entered into, and if such action, settlement, or decree differs in any significant respects from the final plan, the President or the State shall publish an explanation of the significant differences and the reasons such changes were made.

Under the National Contingency Plan ("NCP"), 40 CFR Part 300, promulgated pursuant to Section 105 of CERCLA, and U.S. EPA guidance, a significant difference is an incremental change to a component of the remedy that does not fundamentally alter the overall remedial approach. A

fundamental change, on the other hand, is one that actually changes the basic feature or overall approach of the remedy to be implemented at a site, (e.g., if a remedy was changed from a containment remedy to incineration) and requires a 30-day public comment period.

This Explanation of Significant Differences (ESD) is necessary to document that U.S. EPA and Ohio EPA have decided to modify the remedy selected in the September 1993 ROD. The Agencies believe that the overall protectiveness of human health and the environment provided by the selected remedy will not be compromised by this modification.

This document shall become part of the permanent administrative record file for the Site, which is available for viewing at the Dayton & Montgomery County Public Library, Huber Heights Branch, Huber Heights, Ohio, and at U.S. EPA regional offices in Chicago, Illinois, during normal business hours. The site file is also available for public viewing at Ohio EPA's southwest district office in Dayton, Ohio. The Administrative Record Update is attached as Appendix 1 for a record overview.

III. Summary of Site History, Enforcement Activities, Site Contamination, and Selected Remedy

A. Site History

The Site is a former gravel pit which was converted to a landfill in 1959 and operated until 1984 under several different owners. The current owner is SCA Services of Ohio, a subsidiary of Waste Management of North America, Inc. Commercial, industrial, and non-hazardous domestic wastes were disposed of in the landfill. Degradation of these wastes resulted in a release of hazardous substances. It is also believed that improper disposal of certain types of industrial waste have occurred at the landfill, including ink waste, paint sludge, strontium chromate and benzidine. The landfill ceased operation in 1984 and was capped and seeded in 1985.

The Site was proposed for listing on the National Priorities List ("NPL") on September 8, 1983, and was listed on the NPL on September 21, 1984.

In December, 1984, after identifying contamination in the ground water in the area of the Site, the Ohio EPA requested U.S. EPA's support to determine if an imminent and substantial endangerment to human health or the environment existed. U.S. EPA's Technical Assistant Team ("TAT") sampled 46 private residential wells. Sampling results identified low levels of VOCs in 6 residential wells. After reviewing these sampling results, U.S. EPA determined that an imminent and substantial risk to human health and the environment was not present at that time, and emergency actions were not required at that time. However, the U.S. EPA recommended that several activities be conducted in the area, which included conducting a detailed Remedial Investigation of the Powell Road Landfill.

B. Enforcement Activities

In April, 1986, negotiations began for a 106 Administrative Order on Consent ("AOC") under which Potentially Responsible Parties (PRPs) would perform the Remedial Investigation/Feasibility Study ("RI/FS") at the Site. These negotiations terminated in May, 1986, and U.S. EPA began performance of the RI/FS at the Site.

During June of 1987, one PRP, SCA Services of Ohio, Incorporated, contacted U.S. EPA and expressed interest in taking over performance of the RI/FS. On November 12, 1987, an AOC was entered into between the U.S. EPA, the Ohio EPA, and SCA Services of Ohio, Incorporated ("SCA") (currently a subsidiary of Waste Management of North America, Inc.). This AOC requires SCA to

conduct an RI/FS and to pay all past cost associated with the Site. The final RI report was approved in March of 1992 and the FS was approved in March of 1993.

Initial PRP search activities at this Site identified seven (7) PRPs. General Notices of Potential Liability and CERCLA Section 104(e) Information Requests were issued to all seven (7) PRPs on December 2, 1985. Since 1985, U.S. EPA has issued approximately 400 Information Request and follow-up Information Requests. General notice letters were sent to thirty-seven PRPs in May, 1993. U.S. EPA and Ohio EPA entered negotiations with an expanded PRP group to perform the remedial design work as detailed in the ROD. In June, 1994, a three-party order became effective for the Site requiring the PRPs to design all phases of the cleanup. The PRP group has been satisfactorily conducting the remedial design ("RD"). Additional future Information Requests and follow-up Information Requests will be issued as appropriate.

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C. Site Contamination

The RI determined the nature and extent of on-site and off-site contamination, and estimated the risks posed by the Site to human health and the environment. The RI Report, finalized in February, 1992, identified the following contamination:

On-Site (contamination associated with the Site)

- Landfill gases consisting of methane with detectable concentrations of volatile organic compounds (VOCs).
- Leachate (landfill liquids) consisting of VOCs, semivolatile organic compounds (VOCs).
- Surface and near-surface soils containing semivolatile organics, pesticides and polychlorinated biphenyls (PCBs).
- Shallow and primary aquifers adjacent to the landfill containing VOCs.
- Primary aquifer south of the river (Eldorado Plat area) containing VOCs.

Off-Site (contamination not associated with the Site)

- Primary aquifer south of the river (Needmore Road area) containing VOCs. A connection between the Site and contamination found in this area could not be confirmed and is therefore not addressed by the final remedial action.

Additional sampling of soils, leachate, and ground water was conducted during the pre-design field investigation. The water-quality data from 1983 through 1995 indicates that ground-water quality has improved or remained consistent and has not degraded since 1988. In addition, the contaminant concentrations in the ground water in the vicinity of the Site are at very low levels.

D. Description of the Selected Remedy as Set Forth in the ROD

The remedial action will be a final site-wide remedy. The selected remedial action addresses the sources of the contamination by containment of the landfill and contaminated soils as well as treatment of leachate and ground water. The major components of the selected remedial action for the Powell Road Landfill are:

- Institutional controls, including site security, deed restrictions and access controls.
- Flood protection, including but not limited to seeding and mulching unvegetated areas, maintaining temporary control measures, and protecting existing vegetation.
- Storm water controls including berms, discharge ditches, etc. to dissipate the energy of the storm water flow and reduce erosion potential.
- Excavation of contaminated soils and consolidation of soils under the improved landfill cap.
- An improved landfill cap consisting of a low permeability layer, a drainage layer, a geotextile layer, and a vegetative soil layer.
- A leachate extraction# and collection system consisting of a series of vertical extraction wells installed in the landfilled waste designed to extract leachate in order to prevent its migration out of the landfilled waste.
- On-site treatment systems to treat extracted leachate and ground water.
- Active landfill gas collection to and treatment with a flare.
- Discharge of treated ground water and leachate to river in accordance with an NPDES permit.
- Monitoring systems for ground water, air, points of compliance, and the extraction/treatment/discharge systems, in order to determine the effectiveness of the remedial actions.

The selected remedial action will address the principal threats posed by the Site. The ROD contains a number of remedial components which are unaffected by this ESD and are not discussed in this ESD.

IV. Summary of Significant Differences

The ROD remedy, as described above, is mainly a containment remedy which relies on a physical component (cap) as the primary barrier to contaminant movement. The leachate extraction system serves as a supplement. The changes to the ROD described herein provides for a containment remedy; however, the use of the groundwater extraction and treatment system may be de-emphasized and a need to evaluate its enhancement to the remedy is appropriate.

As a result of discussions involving the Agencies and PRPs, the following significant changes are being proposed by the PRPs:

#This extraction system will be installed inside the containment system. The leachate extraction wells will be pumped as required. The leachate extracted water will be treated before discharge.

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- (1) Postponement of the design and implementation of a shallow groundwater extraction and treatment system until all other related components of the remedy are completed.
- (2) Revisions for the design and implementation of the shallow groundwater extraction and treatment system will be examined and evaluated after continued monitoring of groundwater and calculating groundwater travel time, by the Agencies; and
- (3) Thereafter, one of the following will be applied to the remedy:
 - ò Continue the design and implementation of the extraction and treatment system;
 - ò Continue monitoring the groundwater;
 - ò Request a formal investigation and report on groundwater conditions; or

ð Amend the ROD to delete the groundwater portion of the remedy.

V. Explanation of Significant Differences

U.S. EPA and Ohio EPA have determined that a significant change will be made to the Site remedial action plan. The significant change to the remedy is:

(1) A postponement of the design and implementation of the shallow ground water extraction and treatment system until completion of design and implementation of all other selected remedy components. Once the remaining components of the selected remedial action are designed, constructed and operational, the Agencies shall require the PRPs do a study to calculate ground-water travel time from the northern edge of the landfill to the monitoring wells immediately south of the landfill. At the end of the study to calculate ground-water travel time, plus an agreed upon amount of time for error, the Agencies will evaluate whether ground-water contaminant levels are increasing, remaining the same, or continuing to decline, and whether ground-water cleanup levels have been achieved. Based on these results the Agencies may decide to take one of the following courses of action:

- resume the design and implementation of the extraction and treatment system, or
- continue monitoring the implemented portions of the remedy and ground-water quality; or
- request an investigation of and report on groundwater conditions; or
- amend the ROD to delete the groundwater portion of the remedy.

The Agencies have determined that this change is not considered to be a fundamental change and that no public comment period is warranted; however, a public meeting will be held to discuss the significant changes set out herein. The date and location of the public meeting will be announced by advertisement in a local newspaper of general circulation.

The basis for this significant change primarily rests on water-quality data. Secondary factors include design considerations and historic performance of similar sites.

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Water quality data from 1983 through 1995 demonstrate that ground-water quality has improved or remained consistent and has not degraded since 1988. Total VOC concentrations in on-site shallow ground water have decreased and trends are either level or concentrations are very low or non-detectable. VOCs in the primary aquifer on-site have only been consistently detected at one location and the concentrations has declined between 1998 and 1995. No trends indicative of rising VOC concentrations appear in the data. Additional data gathered by the City of Dayton have not identified a plume from the site in the primary aquifer south of the Great Miami River. Inorganic analyses demonstrate that analyte trends are level or decreasing and are generally within background water quality ranges.

With regard to design considerations, the implementation of a ground-water pump and treat system at this time may only show decreases in contaminant concentrations due to dilution caused by pumping large quantities of ground water. In addition, while there appears to be a hydraulic connection between landfill leachate and the aquifer, there is no indication of significant releases or slugs of leachate. Any future leakage may be reduced by implementing the additional source control measures required by the ROD, including the improved cap and leachate extraction system. Thus, it is expected that the already low contaminant concentrations may decrease even further after implementation of the other remedial components. Furthermore, it has been demonstrated at sites similar to Powell Road Landfill that ground-water extraction and treatment systems are not effective in removing low VOC concentrations, or making the aquifer pristine

(Evaluation of Ground-Water Extraction Remedies: Phase II, Vol. 1 and 2, February 1992).

VI. Support Agency Comments

The Ohio EPA is in agreement with the modifications and approach 3 made by the U.S. EPA to the September 1993 Powell Road Landfill ROD, as expressed in this ESD.

VII. Affirmation of Statutory Determination

U.S. EPA has determined that the selected remedy, with the changes described above, will be protective of human health and the environment, will comply with federal and State requirements that are applicable or relevant and appropriate to this remedial action, and will be cost-effective. In addition, the revised remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this Site. Upon careful scrutiny of the suggested changes and the information submitted to support such changes, U.S. EPA, therefore, has changed the remedy set out in the ROD in the manner described above.

3 40 C.F.R. 300.435(c); "Interim Final Guidance on Preparing Superfund Decision Documents," (OSWER Directive 9355.3-02), June 1989, U.S. EPA Office of Emergency and Remedial Response, at pp. 8-10 to 8-16.

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